

Date Mailed November 1, 2000
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BEFORE THE  
  
PUBLIC SERVICE COMMISSION OF WISCONSIN

Investigation Into the Establishment of Cost-Related Zones for  
Unbundled Network Elements

05-TI-349

**ORDER**  
  
**Proceeding**

This is a proceeding to investigate the establishment of cost-related zones for unbundled network elements (UNEs).

In the Federal Communications Commission's (FCC) *Local Competition Order*, issued August 8, 1996, the FCC established, among other rules, 47 C.F.R. § 51.507(f) requiring state commissions to establish a minimum of three different cost-related zones for UNEs.<sup>1</sup> On May 7, 1999, the FCC stayed the effective date of the UNE requirement (*Stay Order*)<sup>2</sup> until six months after it issued its *Universal Service Order*.<sup>3</sup> The FCC issued the Universal Service Order on November 2, 1999, making the effective date of the UNE requirement May 2, 2000.

However, the *Stay Order* permitted state commissions to request a waiver of the effective date based on a case-by-case review of that state's particular facts and circumstances. On April 4, 2000, this Commission applied for a temporary waiver of the May 2, 2000, effective date. In its motion to the FCC, this Commission explained that hearings were scheduled for October 12, 2000, in docket 6720-TI-161 that includes as issues the number of zones and cost

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<sup>1</sup> First Report and Order, 11 FCC Rcd 15499 (1996). The US Court of Appeals for the 8<sup>th</sup> circuit vacated this rule but the U.S. Supreme Court reinstated it. *AT&T v. Iowa Utilities Board*, 525 U.S. 366 (1999).

<sup>2</sup> *Stay Order*, FCC 99-86, CC 96-98, Rel. May 7, 1999.

<sup>3</sup> Ninth Report and Order and Eighteenth Order on Reconsideration, FCC 99-306, CC 96-45, Rel Nov. 2, 1999.

characteristics of zones. The FCC only granted the Commission a limited waiver, giving it until October 31, 2000, to comply with requirement to create cost related zones for UNEs.<sup>4</sup>

The Commission opened a proceeding on June 20, 2000. A prehearing conference was held on July 12, 2000. Direct, rebuttal, and surrebuttal testimony were prefiled. A hearing was held on September 11, 2000. Initial and reply briefs were filed. A Briefing Memo was sent to the parties on October 16, 2000. Comments on the “Statement of Facts” were submitted.

A list of persons interested in this proceeding may be found in Appendix A.

### **Findings of Fact**

1. It is reasonable to use loop length and line density to establish cost-related zones for unbundled loop rates.
2. There is not significant cost variation for UNEs other than unbundled loops.
3. It is reasonable to create either three or four zones for unbundled loop rates using the method described in this order for compiling data, ranking wire centers, and choosing logical breakpoints in that ranking based on cost characteristics.

### **Conclusions of Law**

1. The Commission has jurisdiction under Wis. Stat. §§ 196.02(1), 196.199(2)(a), 196.219 and 196.25 to issue this decision establishing a method creating cost-related zones for UNE rates and requiring ILECs to submit the data necessary to implement that method.

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<sup>4</sup> *In the Matter of Petitions for Waiver of the Section 51.507(f) UNE Deaveraging Requirement, Petition of the Wisconsin Public Service Commission.* CCB/CPO 00-09 (Rel. April 28, 2000).

2. This order's method creating zones is consistent with the 47 C.F.R. § 51.507(f) requirement that states create a minimum of three cost-related UNE rate zones within the state.

## **Opinion**

### **Background**

Paragraphs 764-765 of the *Local Competition Order* state:

The 1996 Act mandates that rates for interconnection and unbundled elements be “based on the cost . . . of providing the interconnection of network elements.” We agree...that deaveraged rates more closely reflect the actual costs of providing interconnection and unbundled elements. Thus, we conclude that rates for interconnection and unbundled elements must be geographically deaveraged.

. . . We conclude that three zones are presumptively sufficient to reflect geographic cost differences in setting rates for interconnection and unbundled elements . . . states shall create a minimum of three cost-related zones to implement deaveraged rates for interconnection and unbundled elements. A state may establish more than three zones where cost differences in geographic regions are such that it finds that additional zones are needed to adequately reflect the costs of interconnection and access to unbundled elements.

This order resulted in 47 C.F.R. § 51.507(f) which states:

State commissions shall establish different rates for elements in at least three geographically defined zones within the state to reflect geographic cost differences.

(1) To establish geographically-deaveraged rates, state commissions may use existing density-related zone pricing plans described in § 69.123 of this chapter, or other such cost-related zone plans established pursuant to state law.

(2) In states not using such existing plans, state commissions must create a minimum of three cost-related rate zones.

### **Discussion**

The purpose of establishing cost-based zones is to promote efficient consumption and economic entry by competitors. Over-priced low cost loops are a barrier to entry for

competitors. Use of unbundled network elements allows competitors to achieve a level of demand necessary to achieve the economies of scale that would justify building their own facilities. Under-priced loops will deter facilities-based competition, as it will always be cheaper for a competitor to use the ILEC's facilities rather than building competitive facilities. The price for unbundled loops in relation to the cost for those unbundled loops will play a significant role in the advancement of competition. The Commission determined that to promote competition it is important for the establishment of zones to reflect and reveal the degree of variation that exists in costs as precisely as is administratively practical.

#### Zones for Unbundled Loops

The majority of evidence regarding factors that affect the cost of unbundled loops was of a general nature such as the fact that costs tend to decrease as density increases and that costs tend to increase as loop length increases. There was evidence in the record on the relative influence of these two factors. A National Exchange Carriers Association (NECA) study indicated that lines of greater than 18,000 feet in length would require \$10.1 billion of the \$10.9 billion amount estimated to be needed to upgrade NECA company lines to broadband service.<sup>5</sup> The same NECA study includes a density proxy comparing exchanges of 825 lines or less with exchanges of more than 825 lines. The study showed a five to one cost differential.<sup>6</sup>

A study by the National Regulatory Research Institute (NRRI) found that within a single wire center in Maryland costs ranged from a bottom 5 percent of lines averaging \$6.16 per line

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<sup>5</sup> NATIONAL EXCHANGE CARRIER ASSOCIATION, INC., NECA RURAL BROADBAND COST STUDY 4 (2000).

<sup>6</sup> *Id.* at 8.

per month to a top 5 percent of lines averaging \$116.28 per line per month.<sup>7</sup> Accordingly, the Commission considers loop length to be a more significant cost factor than density.

The following options for establishing zones for unbundled loops were presented:

(1) groups of exchanges; (2) groups of wire centers; (3) incumbent local exchange carrier's service territory; and (4) areas smaller than a wire center. A wire center is the area served by a central office. There can be more than one wire center in an exchange. Using groups of exchanges to establish zones would be less precise than using groups of wire centers, as groups of exchanges average costs over a larger area than groups of wire centers.

An NRRI study demonstrated utilizing smaller areas increases the precision of predicting the cost of a particular line. The data showed that a wire center geographic unit was only 32 percent accurate in predicting the actual cost of a particular line, while breaking a wire center into seven zones was 93 percent accurate in predicting the cost of a particular line.<sup>8</sup> Using company service territories would be even less precise than exchanges. However, areas smaller than a wire center are administratively complex to use as a basis for setting zones. Company service territories, per se, are not a cost causative factor, but may reflect different costs if their territories include differences in actual cost causative factors. Accordingly, the Commission selected the wire center as the basis for setting zones because it would be more precise than exchanges or company specific territories but avoids the administrative complexity associated with using the sub-wire center as the basis for establishing zones.

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<sup>7</sup> William Meyer Jr., *Geographic Averaging for the Telecommunications High Cost Support Mechanism*, 20 NRRI QUARTERLY BULLETIN 223, 226 (2000).

<sup>8</sup> *Id.* at 227.

For establishing the parameters of zones the following options were presented: (1) lines per exchange; (2) lines per square mile; (3) relative costs based on cost calculations; (4) distance from a central office; (5) a combination of methods; and (6) ILEC specific non-uniform methods. In evaluating these alternatives, the Commission considered the factors discussed above that affect the cost of unbundled loops. The lines per exchange method does not include a measure of area and so it is a less accurate measure of density than lines per square mile. Use of relative cost calculations would require cost submissions from all ILECs, which may be costly and difficult for some small ILECs to perform. Both loop length and population density are dominant cost drivers for unbundled loops.

Competitive local exchange carriers (CLECs) testified that neither of these variables alone provides a sufficient basis for determining costs. Using a combination of factors should provide greater precision in defining cost-related zones. As these are cost drivers that affect the industry in general, non-uniform ILEC specific methods are inappropriate. The Commission finds that it is reasonable to use both average loop length and average density to rank wire centers, and has developed a method that incorporates both factors into a single ranking method for all wire centers within the state. Because it is combining two different measures, the Commission determined that the variation for each factor for each wire center should be expressed in terms of standard deviations from a mean. The Commission determined that the use of standard deviations was a reasonable means of incorporating consideration of both loop length and density in the establishment of zones.

The Commission determined it would rank wire centers based on a weighted sum of these two factors: loop length and density. The Commission determined that it would weight loop

length twice as much in the calculation in light of loop length's greater affect on costs. The following is a brief summary of the method developed.

- A. Data will be collected on loop length and density for each wire center.
- B. The Commission will calculate the average loop length and average density for each wire center.
- C. The Commission will calculate the average loop length and average density for the state.
- D. The Commission will compute the number of standard deviations from the statewide average for each wire center's average loop length, and will multiply that by two.
- E. The Commission will compute the number of standard deviations from the statewide average for each wire center's average density.
- F. The Commission will add together the two weighted standard deviations from the mean for each wire center, and the wire centers will be listed in numeric order.
- G. The Commission will identify logical breaks to create either 3 or 4 zones.

This method is reasonable. It is a cost-related method. It identifies the geographic territories of wire centers for each zone. It includes factors for both density and loop length to reflect and reveal the degree of variation that exists in costs and should provide sufficient differentiation to promote efficient consumption and competitive entry. It balances accuracy with simplicity, administrative ease, and expediency.

#### Number of Zones

The FCC rule 47 C.F.R. § 51.507 requires states to create a minimum of three different cost-related zones for UNE rates. For purposes of the *CALLs Order*<sup>9</sup> federal universal service support, the FCC will accept no more than four UNE zones. If a state commission creates more

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<sup>9</sup> Sixth Report and Order in CC Docket Nos. 96-262 and 94-1, Report and Order in CC Docket No. 96-249, Eleventh Report and Order in CC Docket No. 96-45, Rel. May 31, 2000.

than four zones, they will be grouped to form no more than four zones when applying for such support. How those zones are grouped could affect the amount of portable *CALLs Order* universal service support that one provider receives compared to another. Therefore, the Commission finds that it is reasonable to create either three or four UNE zones. The precise number will depend on what the loop length and density data demonstrate about the cost variations between the wire centers in the state.

#### Data Collection

Data needs to be collected on average loop length as well as average access lines per square mile by wire center to implement the Commission's selected method for defining zones. The Commission's annual report includes identification (ID) numbers for each exchange. For example, the ID number for the Appleton exchange is 150. Where there is more than one wire center in an exchange, the central offices have names assigned, such as "3Greenville," and "4Appleton" in the Appleton exchange. Some of the central offices are stand-alone switches, some are host switches and some are remote switches. This reflects current network architecture. It is reasonable for the Commission to use the wire centers listed in its 1999 annual report as the basis for establishing zones. Data should be reported using the ID numbers and assigned names used in the annual report.

Actual route lengths for unbundled loops are difficult to determine for a number of reasons including redundancy in routing and the existence of digital loop carrier and remote switches instead of traditional serving area interfaces. In addition, utilities are not required to provide the Commission, and many do not have, vertical and horizontal coordinates providing the location of each customer. However, many utilities are currently collecting this data for



network design purposes.<sup>10</sup> Where actual loop length data is available, that is what shall be submitted.

To avoid creating an unreasonable administrative burden, the Commission also will accept estimated data based on a method further described below. Actual data on loop lengths measure how long a loop is from start to finish. It shall represent the shortest available route where redundancies exist. Some actual and some estimated data may be provided for the same wire center if that is what is available. If actual data is not available, a company shall submit estimated information. Estimated loop lengths shall be based on the airline mile distance between a customer location and a central office. Such estimates may rely on a company's managers' general knowledge of customer locations in their service territory. This should provide sufficient accuracy while avoiding the need for vertical and horizontal coordinates of customer locations. Both actual and estimated data shall be presented in the format below, which uses one-mile increments and indicates percentages of a wire center's access lines in that increment. Using fictitious data for illustrative purposes below, loop length data would be submitted in the following format:

Wire Center Name and ID: 150, Appleton, 3 Greenfield

<u>Increments</u>	<u>Percentage of Access Lines</u>
0 to 1 mile	43 percent
1 to 2 miles	22 percent
2 to 3 miles	17 percent
3 to 4 miles	10 percent
4 to 5 miles	<u>8 percent</u>
Total	100 percent

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<sup>10</sup> For example in order to determine where Digital Subscriber Line (DSL) can be offered, utilities need information on loop lengths.

The one-mile increments would indicate actual loop lengths where actual routes are known and airline miles where estimates are provided. The Commission will provide a Microsoft Excel spreadsheet for this data, to be submitted electronically. Collecting data in this manner will provide statewide data while avoiding the need for cost study submissions.

Access lines per square mile will be easier for the ILECs to provide than average loop length. The Commission's annual report currently includes reporting of square miles for each exchange.<sup>11</sup> Data submitted should be consistent with that reported for the 1999 annual report. Where an exchange includes more than one wire center, the information will need to be broken down further than the annual report data for those exchanges. However, for many of the small ILECs, the exchange and the wire center are the same. ILECs should also submit the number of square miles in each wire center and the number of access lines in each wire center based on the 1999 annual report.

The above information shall be filed by December 4, 2000. If this filing date causes an extreme hardship, the ILEC can contact the administrator of the Telecommunications Division in writing and the administrator shall decide whether to grant the ILEC a later filing date. The Commission will report its calculations and the resulting wire center ranking, and will issue an order establishing the parameters of the zones. As characteristics of wire centers change, wire centers are added or deleted, or additional actual data becomes available, the same data as described above may be obtained by the Commission for those wire centers and the rankings re-calculated.

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<sup>11</sup> The Commission's annual report also includes reporting of total route miles by exchange but was not discussed on the record in this docket and is a significantly different measure than loop length. This data may be useful in future proceedings.

The Wisconsin State Telephone Association (WSTA) wanted its members to have the option to create zones smaller than a wire center once they experience facilities-based competition. The WSTA identified that sub-wire center zones may allow more efficient pricing of UNEs because they may more precisely reflect the cost that competitors face in their decisions about whether to build their own facilities or purchase UNEs. Competitors were concerned that sub-wire center deaveraging should not be contingent on the advent of competition because deaveraging is intended to facilitate the emergence of competition. They argued that the variation is either significant enough to justify zones or it is not.

The Commission recognizes that there may be more cost variations within some wire centers than within other wire centers. There may be more significant cost variations within rural wire centers with a business district surrounded by rural areas, than within urban wire centers with limited variation in density or loop length. However, at this early date the Commission believes it is reasonable to establish only wire center based zones. With experience, the Commission can evaluate whether the ranking method it develops provides sufficient differentiation in costs between zones to promote efficient consumption and economic entry by competitors. Therefore, the Commission shall reevaluate its decision in this docket in approximately two years once it has gained greater experience in determining the variation of cost between zones. In particular, the Commission may reconsider its decision not to allow zones on a sub-wire center basis or may refine its method, especially for areas in the least dense, longest loop length zones.

Small ILECs identified that companies that qualify for the federal rural exemption under 47 U.S.C. § 251(f) are not required to provide access to UNEs until their rural exemption has

been removed. The Commission recognizes that prices for UNEs will not need to be developed by such companies until they offer UNEs. Even then, companies covered by the rural exemption may be located in areas where only one zone would apply to their rates. However, the Commission is trying to evaluate the variability in the cost of providing UNEs statewide. This will provide the Commission with information regarding the extent to which this state contains both high cost and low cost areas. Accordingly, it is reasonable for the Commission to require data submission by all companies, even those qualifying for the federal rural exemptions, for purposes of establishing zones.

#### UNEs Other Than Loops

The FCC rule 47 C.F.R. § 51.507(f) requires the creation of zones for UNE rates. While it is clear that the cost of loops can vary significantly, there is a question as to whether other UNEs have cost differences significant enough to require the creation of rate zones for those UNEs as well. Various witnesses testified that loops are the only UNEs with costs that vary significantly by density or other geographic factors; that rates for unbundled transport are already effectively deaveraged because they reflect differences in distance, traffic and volume; and that there are no significant cost differences for transport, switching and ports.

Ameritech argues that it should be allowed to use its existing access rate zones for unbundled transport because the provision of access uses the same DS1 and DS3 facilities that are included in unbundled transport. However, without more evidence concerning issues such as the basis on which those zones were created, what factors affect cost, and what cost variations exist, the Commission is unwilling to adopt Ameritech's existing access rate zones at this time.

Therefore, the Commission finds that there is not cost variation significant enough to require the creation of zones for UNEs other than unbundled loops at this time.

#### Tariffs and Interconnection Agreements

The issue of amending existing tariffs and interconnection agreements to reflect this order was raised at hearing and in the post-hearing briefs filed by the parties. The Commission has decided not to address the issue of amending existing tariffs at this time. The Commission will be thoroughly addressing the issue of requiring UNE tariffs in Ameritech's Operation Support System (OSS) docket (6720-TI-160). The Commission defers its decision in this docket on tariffing until it has had an opportunity to review the record in Ameritech's OSS docket.

The Commission also decides not to require amendments to existing interconnection agreements at this time. Many agreements include clauses that automatically incorporate state and federal law changes and orders into the agreement. Parties may seek remedies under the negotiation and arbitration provisions of 47 U.S.C. § 252. Specifically, CLECs argued in briefs that refusing to amend an interconnection agreement to comply with changes in state law is a violation of the 47 U.S.C. § 252 duty to negotiate in good faith. Moreover, agreements may include a clause that permits a CLEC, under 47 U.S.C. § 252(i), to adopt UNEs provided to other CLECs under approved interconnection agreements. The Commission prefers to entertain interconnection agreement disputes on a case-by-case basis under the procedures set forth in 47 U.S.C. § 252.

**The Commission Orders:**

1. All incumbent local exchange carriers shall submit by December 4, 2000, in electronic format to be provided by Commission staff, the following information for each wire center reported to the Commission in the ILEC's 1999 annual report .

- a. Exchange name and Commission identification number.
- b. Central office assigned name.
- c. Number of access lines served by that central office.
- d. Square miles in the wire center served by the central office.
- e. Percentages of access lines in one-mile increments from the central office, indicating whether actual or estimated data was provided.

2. If the Commission determines in docket 6720-TI-160 that tariffs for UNEs are required to be filed in addition to making UNEs available through interconnection agreements, then all incumbent local exchange carriers that offer UNEs shall file tariffs reflecting the zones established using the method described in this order.

Dated at Madison, Wisconsin, \_\_\_\_\_

By the Commission:

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Lynda L. Dorr  
Secretary to the Commission

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APPENDIX A

This proceeding is not a contested case under Chapter 227, Stats., therefore there are no parties to be listed or certified under s. 227.47, Stats. However, an investigation was conducted, and the persons listed below participated.

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